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Statistical Bulletin

METROPOLITAN LIFE INSURANCE COMPANY

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$66,000,000 Paid in War Claims by the Metropolitan

THE Metropolitan Life Insurance Company has disbursed about $66,000,000 in the payment of "War Claims" on about 75,000 deaths among its American and Canadian policyholders in World War II. This amount has been paid by the various Departments of the Company for deaths from all causes among men in service, as well as for deaths from enemy action among civilians. The account is not quite complete, because in a number of cases claims are unavoidably delayed in being forwarded to the Company.

Deaths among insured civilians were but a small proportion of the total war deaths. In the Metropolitan's experience they amounted to about 2 percent of the deaths from enemy action for the war period as a whole. However, civilian fatalities—almost entirely merchant seamen—were relatively much more prominent in the early years of the war when heavy losses were inflicted on our merchant ships. For example, in 1942 almost one fifth of the deaths from enemy action in this insurance experience were among civilians, as compared with one twentieth in 1943 and a negligible proportion in both 1944 and 1945, thus reflecting the subsidence of the submarine menace.

The deaths among military personnel have been classified into three broad groups—deaths from enemy action, from nonbattle injuries (very largely accidents) and from disease. The chart on page 2 shows the relative importance of each of these three groups month by month, from December 1941 to September 1945. The proportion of deaths from disease and from nonbattle injuries rose somewhat at first with the increase in the number of policyholders entering the armed forces, but the losses from these causes became stabilized at about the level reached by the middle of 1943. For battle deaths the shape of the curve is much more distinctive, and in it can be traced the progress and the intensity of the war.

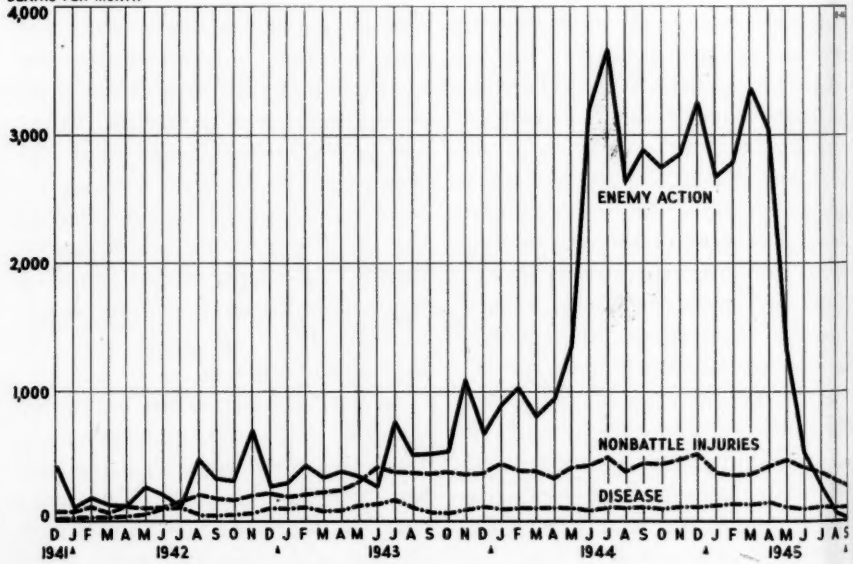
In the early part of the war, three months stand out prominently—December 1941, when Pearl Harbor was attacked by the Japanese; August 1942, when the Allies raided Dieppe; and November 1942, when the Americans invaded North Africa.

In 1943 the losses remained fairly constant for the first six months of the year, at the level reached in December 1942. Then, in July, our invasion of Sicily brought another rise. The losses receded somewhat in the next three months, but from November 1943 to May 1944 the fighting in Italy, the air raids over Europe preparatory to our approaching invasion, added to the Pacific losses, caused the upward trend of the curve. The peaks in this period —November 1943 and May 1944— mark the invasion of the Gilberts and the losses in Italy.

Thus far in the war the curve of deaths from enemy action, while irregular, moved upward gradually. With the landings in France the losses mounted sharply, reaching the peak of the entire war in July 1944, when we fought through the hedgerows of Normandy to consolidate our new-won positions. The German offensive in the Battle of the Bulge brought another setback in December, while the break-through into Germany brought the losses in March 1945 to the second highest on record.

Heavy fighting in the Pacific, added to the final drive on Germany, resulted in a high level of deaths in the first four months of 1945, preceding V-E Day. Then, the fighting in the European area having ceased by May 7th, the deaths in that

Number of War Deaths in World War II, by Month of Death. Metropolitan Life Insurance Company. All Departments. December 1941 to September 1945


DEATHS PER MONTH
4,000
3,000
2,000
1,000
0
ENEMY ACTION
NONBATTLE INJURIES
DISEASE
D J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S
1941
1942
1943
1944
1945

Based on claims paid to January 1, 1946.

month were less than one half those in April. Another sharp drop occurred in June and July, so that by August the deaths were less than in the early months of 1942.

At the same time that heavy battle losses were occurring, many wounded in action were being saved by the medical services. The death rate from wounds of war was only about one half that in World War I. The careful preparations made for first aid on the battlefield and the prompt removal, by air, of severe casualties to well-equipped hospitals, cut drastically the number of those dying from wounds. Blood plasma, the sulfa drugs, and skillful surgery not only saved many lives but also reduced appreciably the period of disability for those who recovered.

The same medical organization was responsible for the excellent health record of the armed forces. Deaths from disease were a much smaller proportion of the total than in any previous war. According to the Surgeon General of the Army, the ratio of deaths from disease to battle deaths in World War II was less than one in 13 among the ground forces. In World War I the two were approximately equal, while in the Spanish-American War the ratio was exactly opposite, namely, 13 deaths from disease for each battle casualty.

The low case-fatality from disease in World War II resulted in a tremendous saving of life. This accomplishment was all the more remarkable in view of the handicaps of climate and sanitary conditions which had to be overcome on many fronts. Moreover, troops were exposed for long periods to diseases unusual and rare in civilian life in the United States.

The leading causes of death from disease among the armed forces were about the same as in a civilian group of a like age distribution. For example, among the military personnel, the leading causes of death were, in the order of their numerical importance, the diseases of the cardiovascular-renal system, influenza and pneumonia, cancer, and tuberculosis. It was only among the less common diseases that the effect of the war was at all apparent. The group of "unknown causes" was unusually high, ranking fifth in importance. This was followed by malaria, meningitis, and dysentery. Two of these—malaria and dysentery—occurred in a sizable proportion of the cases in Japanese prison camps where medical service was altogether lacking. The remaining diseases to cause any appreciable number of deaths were appendicitis, leukemia, and "other diseases of the liver."

There were, of course, deaths reported from diseases rare in our normal experience. Thus beriberi and typhus ranked above the more common diseases of syphilis and diabetes in this war experience. But taking the results of the entire period for all the services, the mortality from disease among Metropolitan Life Insurance Company policyholders in service was low, the rate being not more than 0.5 per 1,000 per annum.

The record for nonbattle injuries was less satisfactory. The ratio of fatal nonbattle injuries to battle deaths was of the order of one to four among the ground forces as compared with 1 in 12 in World War I. This may be due largely to the mechanized nature of the present-day warfare. Approximately one half of the accidental deaths resulted from air transport. Many of these occurred in training, with more than one half of them reported in the home area. Motor vehicle accidents were also numerous, accounting for almost one fifth of the accidental deaths. The other leading types of accidents in their numerical order of frequency were those from firearms, water transportation, drowning, explosions, falls, railroad accidents, and burns. About 1 percent of the accidental deaths were due to typhoons and hurricanes.

Health Work Pays

MODERN medicine and public health work have been extraordinarily successful in combating disease and in extending the average length of life. Since the turn of the century the general death rate in this country has been reduced by about 40 percent, and the average length of life has been increased by about 16 years.

The gain in longevity has added several years to the productive life of the average wage-earner, and hence has increased his capitalized value to his dependents. According to the mortality prevailing in 1900, about one half of the men at age 20 would reach age 65; under present conditions the proportion is about two thirds. The increased money value can be determined by comparing the present value of net future earnings computed on the basis of the life table for 1939-1941 with that similarly computed on the basis of the mortality four decades earlier, as represented by the United States life table for 1900-1902. The gains for men with specified earnings, according to age, are shown in the table on page 5. For a young man 20 years of age with annual earnings of $1,250, the gain in longevity achieved means an increase from $27,400 to $29,900 in the present worth of his net future earnings, that is, a gain of $2,500. At age 30, with annual earnings of $2,370, the corresponding values for the two periods are $28,300 and $30,100, a gain of $1,800; and so on through life. In the higher income brackets the gains are materially greater.

These economic benefits and the high values of net future earnings may be regarded as an indication of the remunerative force of money invested in public health work. For, these gains in longevity have resulted in large measure from achievements in medical and sanitary science, social hygiene, and public health administration. Since 1900 health agencies throughout the country have extended existing services and

GAIN IN PRESENT VALUE OF NET FUTURE EARNINGS RESULTING FROM IMPROVEMENT IN MORTALITY BETWEEN 1900–1902 AND 1939–1941 FOR MEN WITH SPECIFIED ANNUAL EARNINGS,* ACCORDING TO AGE; INTEREST AT 2½ PERCENT

AGE	ANNUAL EARNINGS*	PRESENT VALUE OF NET FUTURE EARNINGS ACCORDING TO MORTALITY OF		GAIN BY IMPROVEMENT IN MORTALITY
		1900–1902	1939–1941	
20	$1,250	$27,400	$29,900	$2,500
25	1,975	29,700	31,900	2,200
30	2,370	28,300	30,100	1,800
35	2,470	25,000	26,200	1,200
40	2,500	20,500	21,300	800
45	2,470	15,500	15,800	300
50	2,405	10,400	10,400	†

*After deduction of income tax. †No change.

have taken on many new functions. Considerable progress has been made in the control of tuberculosis, pneumonia, and venereal disease, while hospital and sanitarium facilities have been much expanded. The inspection and supervision of water and food supplies have been extended and tightened. Public health nursing, industrial hygiene and health education have all played a role of growing importance. At the same time vital statistics record-keeping has greatly improved, with the result that public health activities have, to an increasing degree, been based on a solid groundwork of fact.

While great progress has been achieved in the prevention and treatment of disease, no one will deny that our death rates are still higher than they need be. To allow preventable deaths to occur is, from the humane standpoint, a disquieting thought; from the standpoint of social economics it represents, at the least, inexcusably bad management of our affairs. Clearly all the means at our command should be brought to bear in the endeavor to bring the longevity of our population nearer to the possible upper limit. Public health work is an essential mechanism with good medical care to achieve this result.

It is clear that present expenditures in the public health field are still inadequate. In a recent report the Committee on Local Health Units of the American Public Health Association found that "one third of the Nation lives under substandard local health organization, ill-equipped to give basic minimum health protection at all times and to meet public health emergencies quickly and efficiently." Instead of an average of some 60 cents per capita for local health service in this country, we should be spending about four times that amount, or about $2.50. Such a sum would make possible health activities con-

sistent with our present knowledge of sanitary science and health administration. The economic returns on money thus invested would be very large, in addition to the important result that flows from humanitarian efforts—the diminution of human suffering. For the lives saved represent, as we have seen, large economic values to the dependents of those so preserved. The citizen who contributes in taxes or otherwise to the support of public health measures is thereby purchasing insurance against the eventuality that he or his family may be financially or otherwise the victims of neglected precautions. The community feels the benefit in part through reduced need for expenditures on public relief; in part through such less tangible effects as stimulus to productive activity and higher morale.

Although a retrospect of the progress achieved in public hygiene is very gratifying, it would be a grave error to look upon our partial success as evidence that we may rest satisfied with our present efforts. In two directions persistent and increasing attention to the problem of public health administration is needed. First, to reap the benefits of existing knowledge by seeing to it that such knowledge is duly applied where opportunity presents itself; and second, where present knowledge is clearly insufficient, research work must be forcefully prosecuted. Such investigation is costly and demands large resources which, fortunately, are being supplied from various quarters, in part by the generous benefactions of public-spirited individuals. But the community as a whole and its leading political representatives and administrators must be interested in these enterprises and prepared to give them adequate support. And there could hardly be a better, a more convincing way of persuading the public to take its proper share in the support of these researches and other necessary operations, than to point out the money losses involved in the ravages of disease. To forestall these losses by preventive and remedial measures is a paying investment of the most desirable character.

Accidents—Chief Killer of School Children

ACCIDENTS take the lives of about 6,500 school children a year in the United States. Although the death rate from accidents among youngsters has declined markedly in recent decades, the reduction has not kept pace with the decline from disease. As a result, accidents are now the leading cause of death among school children. Thus, among Metropolitan Industrial policyholders at the school ages, accidents now account for about 40 percent of all deaths among white boys, whereas 30 years ago the proportion was only 22 percent; among white girls accidents have in the same period increased from 8 percent of the total

mortality to 20 percent. It is clear that the situation calls for intensified efforts in the field of safety education both in the school and in the home.

Points of attack that might result in lowering the fatal accident rate among school boys and girls are suggested by an analysis of the information given in the death claim papers of children, 5 to 14 years, insured in the Company's Industrial Department, who died by accidental means in 1945. As shown in the table below, motor vehicle accidents accounted for 185 deaths, or for more than one third of the total of 507 deaths from accidents among boys, and for 73, or more than two fifths of the 171 accident fatalities among girls. The great majority of these motor vehicle accidents occurred while the youngsters were crossing the street or highway, or while they were playing in the road.

Drownings were responsible for

NUMBER OF DEATHS FROM ACCIDENTS AMONG BOYS AND GIRLS AT AGES 5 TO 14 YEARS ACCORDING TO ACTIVITY OF CHILD AND TO AGENCY INVOLVED. METROPOLITAN LIFE INSURANCE COMPANY.* WEEKLY PREMIUM-PAYING INDUSTRIAL BUSINESS. 1945

ACTIVITY AND AGENCY INVOLVED	TOTAL	MALE	FEMALE
Accidents (Total)	678	507	171
Motor Vehicle (Total)	258	185	73
Drowning (Total)	165	139	26
Swimming, wading	63	50	13
Falling from raft	7	7	0
Falling from bank, rock ledge, dock, bridge	40	35	5
Playing on thin ice	5	4	1
Small-boat accidents	21	19	2
Other and not specified	29	24	5
Firearms (Total)	54	48	6
Playing with gun	17	15	2
Cleaning or examining gun	2	2	0
Showing gun to companion	5	4	1
Hunting	8	8	0
Shooting at cans or other targets	5	5	0
Other and not specified	17	14	3
Burns, Conflagrations, Explosions (Total)	72	38	34
Playing with matches	9	3	6
Playing with or near flammable liquids	9	6	3
Member of family kindling fire with kerosene	2	2	0
Playing near bonfire	3	1	2
Upsetting hot fluids	2	0	2
Clothing ignited at open fires	12	5	7
Burning residence	33	19	14
Other and not specified	2	2	0
Falls (Total)	24	16	8
Running, jumping on sidewalk	5	3	2
Diving into shallow water	2	2	0
Porch	3	2	1
Playground slide	2	1	1
Other and not specified	12	8	4
Railway Accidents† (Total)	19	15	4
Walking along or playing on tracks	7	6	1
Sitting on tracks and watching trains	2	2	0
Crossing tracks at places other than public crossings	4	4	0
Other and not specified	6	3	3
Hanging, Choking, etc. (Total)	13	9	4
Hanging while playing with rope, belt, etc.	8	7	1
Choking by aspiration of food particle, fruit pit, etc.	5	2	3
Machinery Accidents (Total)	8	8	0
Crushing by freight elevator while at work	3	3	0
Crushing by tractor on farm	3	3	0
Other tractor accidents	2	2	0
Struck or Crushed by Falling Objects (Total)	8	6	2
Electric Current (Total)	6	5	1
Contacting high-tension wire while climbing poles, girders, etc.	3	3	0
Other and not specified	3	2	1
All Other Accidents (Total)	51	38	13
Absorption of poisonous gas—illuminating or coal	8	4	4
Ingestion of poisonous solids or liquids	4	3	1
Sled striking fixed object	3	1	2
Run over by horse-drawn wagon	3	2	1
Other and not specified	33	28	5

*Excluding Pacific Coast and Canada.

†Except collision with motor vehicle.

nearly one fourth of the accidental deaths among the insured children, and among boys were outranked in number only by motor vehicle deaths. A study of the circumstances surrounding these drownings makes it clear that campaigns to prevent drownings should not be confined entirely to swimming, wading, and boating activities, although these account for the largest number of deaths in this category. Nor should efforts in this field be confined to the summer season. Almost one fourth of those drowned were reported to have fallen into the water while playing on the bank of the water, on a rock ledge, dock, bridge, guard rail, or overhanging tree. Several of the youngsters lost their lives when they fell through thin ice on ponds or lakes. About one fifth of the drownings occurred outside the water sports season May to September.

More than 10 percent of the fatalities in this insurance experience were due to burns, conflagrations, or explosions. Nearly one half these victims were trapped in burning homes. It is clear from the table that younger school children still play with matches despite the widespread effort that has been made to impress upon parents the danger involved. A number of children succumbed to burns suffered while playing with or near flammable liquids. Unfortunately, children, and for that matter, many adults as well, do not realize adequately the great danger of fire and explosion from kerosene or other flammable fluids, especially gasoline.

Firearm accidents played an important role in the toll among boys at the school ages. Forty-eight, or nearly 10 percent of the fatalities among boys, resulted from shooting accidents. Playing with, examining, or showing guns to companions were common causes of accidents of this kind. Eight of the boys, most of them in their early teens, were killed in hunting accidents. Now that another hunting season is getting into full swing, parents should take heed of the great dangers youngsters run in setting out to hunt alone or with other inexperienced young companions. Aside from these hunting fatalities, accidents resulting from shooting at tin cans or other targets caused the death of five boys.

Seven girls and one boy in this insurance experience accidentally strangled themselves or broke their necks while playing with ropes. In several of these instances the youngster was attempting to imitate a hanging seen in the movies or read about in stories. Similarly, the fascination that railroad trains and tracks hold for young boys results in numerous accidents. Nineteen of the insured youngsters were killed last year in accidents on railroad rights-of-way, and of this number, seven were killed while walking along or playing on tracks. Two of the victims were actually sitting on the tracks and watching trains pass.

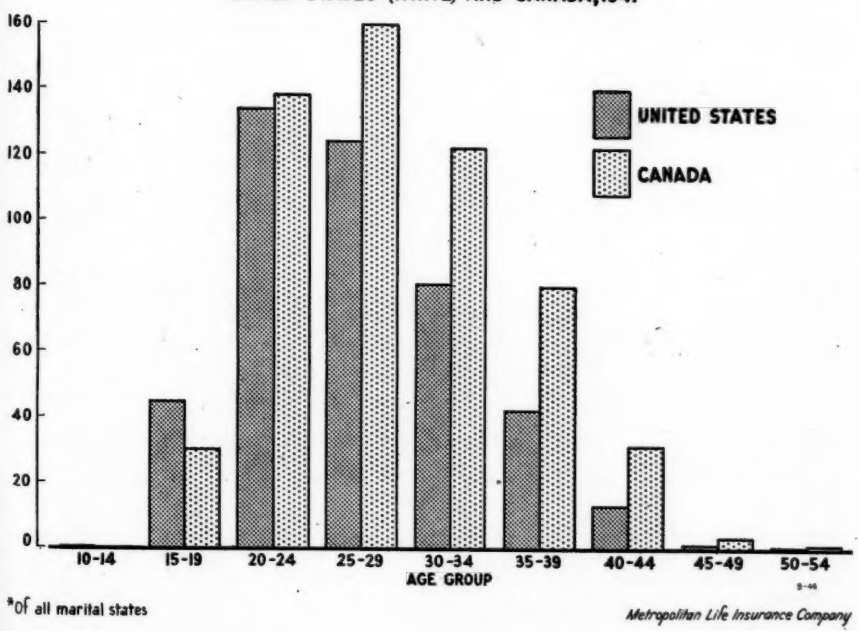
It is outstandingly clear from the analysis here presented that many children could be saved from accidental death if parents kept closer watch over them.

Fertility of American and Canadian Women

THERE is a characteristic difference between the fertility according to age among the women of the United States and those of Canada. For the latter the peak is very materially higher and is reached later in life; also, the decline in fertility with age is much more gradual among the Canadian than among the women of the United States. All this is clearly seen in the accompanying graph and in the table on the following page.

Only among very young women, those under 20 years of age, is the fertility rate lower in Canada than in the United States. At ages 20 and over not only are the rates for Canadian women greater than for American women, but the difference widens with each advance in age.

At ages 15 to 19 years there were 4,466 births per 100,000 white women in the United States in 1941; this was appreciably above the corresponding rate, 3,054, for Canadian women of the same ages. The higher fertility among young American women may be explained, in part, by the earlier age at marriage in the United States. Even though American women experience their peak fertility in the age group 20 to 24 years, the reproduction rate for white women in the United States falls below that for Canadian women.



However, the disparity between the two figures at these ages is not great, amounting to only 3 percent.

Among the women of Canada the peak in reproductivity is found in the next age group, 25 to 29 years. For all of Canada the rate was 15,984 births per 100,000 women, while for the Province of Quebec alone it was as high as 18,989. These rates are, respectively, 29 percent and 53 percent above that of white American women of the same ages.

From their peak the rates decrease rapidly with advance in age to the end of the reproductive period, the decline being much more rapid for American women than for Canadian. The widening margin between the two sets of figures reflects the larger average size of family in Canada.

The outlook for continued population growth by natural increase is, therefore, distinctly more favorable for Canada than for the United States. According to mortality and fertility conditions prevailing in 1940–1942, the Canadian population was then growing at a rate of 27 percent per generation. At about the same time the corresponding conditions of mortality and fertility in the United States were not much above the level required to just maintain a stationary population. It remains to be seen how these two patterns of fertility and family size for the two countries will be affected in the postwar years.

BIRTHS PER 100,000 FEMALES OF STATED AGES. UNITED STATES* AND CANADA† COMPARED, 1941

AGE	UNITED STATES (White)	CANADA†	CANADA,† EXCLUDING QUEBEC	QUEBEC
	BIRTHS PER 100,000 FEMALES AT STATED AGE			
10–14	22	13	16	7
15–19	4,466	3,054	3,476	2,141
20–24	13,392	13,838	13,869	13,767
25–29	12,437	15,984	14,708	18,989
30–34	8,079	12,234	10,726	15,732
35–39	4,226	7,999	6,554	11,437
40–44	1,330	3,156	2,420	5,057
45–49	119	354	256	634
50–54	3	7	5	15
	AS PERCENT OF CORRESPONDING FIGURE FOR THE UNITED STATES			
10–14	100	59	73	32
15–19	100	68	78	48
20–24	100	103	104	103
25–29	100	129	118	153
30–34	100	151	133	195
35–39	100	189	155	271
40–44	100	237	182	380
45–49	100	297	215	533
50–54	100	233	167	500

*White.

†Excluding Yukon and Northwest Territories.

Comparative Data on the Causes of Death Among Industrial Policyholders

The following table shows the mortality among Industrial policyholders for August 1946 and August 1945, together with the death rates for the first eight months of 1946, 1945, and 1944.

DEATH RATES* PER 100,000 POLICYHOLDERS FROM SELECTED CAUSES
WEEKLY PREMIUM-PAYING INDUSTRIAL BUSINESS
METROPOLITAN LIFE INSURANCE COMPANY

CAUSE OF DEATH	ANNUAL RATE PER 100,000 POLICYHOLDERS*				
	August 1946	August 1945	Year to Date: End of August		
			1946	1945	1944
ALL CAUSES—TOTAL	647.1	714.8	774.8	867.3	830.7
—Excluding war deaths	*642.1*	*656.1*	*757.4*	*752.7*	*792.1*
Typhoid fever	0.4	0.5	0.2	0.3	0.2
Measles	.1	.2	.8	.2	1.0
Scarlet fever	.1	.3	.1	.3	.5
Whooping cough	.4	1.0	.6	.8	.6
Diphtheria	.4	1.0	.6	.8	.6
Influenza	.4	.7	5.7	3.5	11.3
Pneumonia (all forms)	15.3	16.1	28.6	29.3	38.4
Tuberculosis (all forms)	34.9	34.7	38.5	37.8	41.8
Tuberculosis of respiratory system	31.1	31.2	34.8	34.1	38.0
Syphilis	6.8	6.9	8.3	8.5	9.6
Cancer (all forms)	107.0	104.3	114.1	111.7	108.9
Diabetes mellitus	21.5	21.9	27.3	25.7	29.3
Cerebral hemorrhage	57.6	58.1	69.1	67.8	67.6
Diseases of the coronary arteries and angina pectoris	60.7	57.6	71.4	67.2	63.9
Other chronic heart diseases†	126.5	127.6	167.6	161.0	173.0
Diarrhea and enteritis	2.3	4.2	2.6	3.2	4.1
Appendicitis	2.9	6.0	3.5	5.0	5.7
Chronic nephritis	35.1	36.0	43.6	45.1	48.6
Puerperal state—total	3.1	3.1	3.1	3.5	4.3
Suicides	6.9	6.4	7.3	6.2	6.2
Homicides	3.4	2.1	3.9	2.9	2.9
Accidents—total	51.1	54.0	49.7	55.5	54.4
Home accidents	5.9	6.7	10.6	10.1	10.7
Occupational accidents	5.1	4.5	4.7	5.1	5.8
Motor vehicle accidents	17.1	11.8	15.8	12.7	13.5
War deaths (enemy action)	5.0	58.7	17.4	114.6	38.6
All other causes of death	105.4	113.5	110.9	116.3	119.2

*The rates for 1946 are subject to slight correction, since they are based on provisional estimates of lives exposed to risk.

†International List (1940) titles 92, 93 (c), (d), (e), and 95.

Correspondence on the subjects discussed in these BULLETINS may be addressed to: The Editor,

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Metropolitan Life Insurance Company
1 Madison Avenue, New York 10, N. Y.

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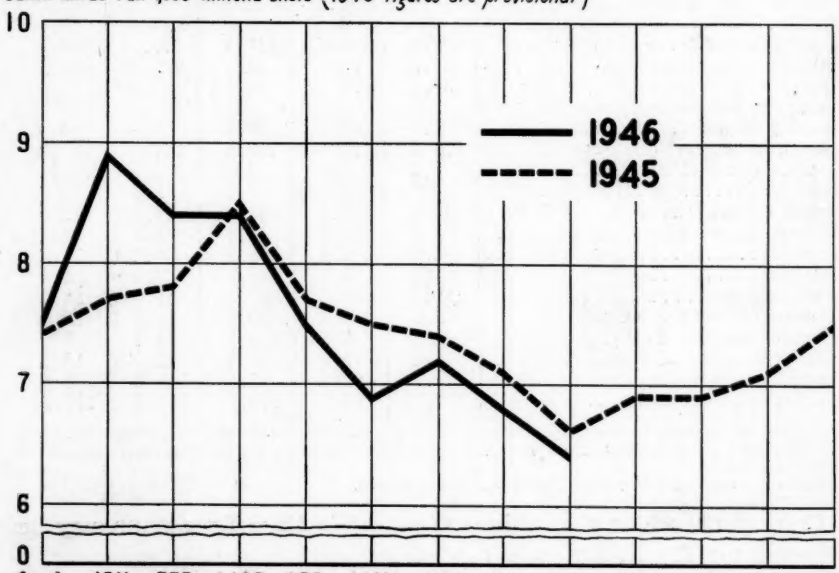
MORTALITY FROM ALL CAUSES

METROPOLITAN LIFE INSURANCE COMPANY
INDUSTRIAL DEPARTMENT, WEEKLY PREMIUM-PAYING BUSINESS

DEATH RATES PER 1,000 ANNUAL BASIS (*1946 figures are provisional*)



[DEC]	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
1945	7.7	7.8	8.5	7.7	7.5	7.4	7.1	6.6	6.9	6.9	7.1	7.5
1946	8.9	8.4	8.4	7.5	6.9	7.2	6.8	6.4				

* *Does not include war deaths*

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